

Title (en)
Gimbal module.

Title (de)
Kreuzgelenkmodul.

Title (fr)
Module d'un joint universel.

Publication
EP 0405476 B1 19931027 (EN)

Application
EP 90112185 A 19900627

Priority
US 37395689 A 19890630

Abstract (en)
[origin: CA2019342A1] A gimbal module for installation in a gimbal assembly is provided. The gimbal module is suitable for operation by a simple type of robot device for use in a space environment. The module has a stator, which is fixedly connected to a first gimbal, and has a rotor, which is fixedly connected to a second gimbal. The first gimbal, second gimbal, stator and rotor are coaxial along a common gimbal axis upon installation thereof. The stator and first gimbal have respectively a stator spline and a gimbal spline for aligning and installing the stator in the first gimbal. The stator has a bearing which rotatably supports the rotor. The first gimbal has a bearing which rotatably supports the second gimbal. The first gimbal has an adapter plate which connects to the stator. The second gimbal has a second adapter plate which connects to the rotor. The stator and first gimbal have respective stator connector components. A first force is applied along the gimbal axis on the module for aligning and installing the stator and its connector component into the first gimbal and its connector component. The rotor and the second gimbal have respective rotor connector components. The rotor has a rotary hex nut, a pinion gear fixedly connected to the rotary hex nut, a ring gear with an internal thread connecting to the pinion gear and with three external equally spaced rollers, and a cam ring with three internal cam slots respectively receiving the three rollers. The cam ring, which is supported by the rollers supports the second gimbal connector component. The rotor supports the rotor connector component. The hex nut is rotated by the robotic device for applying a force urging the connector component on the cam ring into the connector component on the rotor.

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